

Appl. No. 10/733,984
Examiner: MONDT, JOHANNES P, Art Unit 3663
In response to the Office Action dated July 18, 2006

Date: October 12, 2006
Attorney Docket No. 10113311

REMARKS

Responsive to the Office Action mailed on July 18, 2006 in the above-referenced application, Applicant respectfully requests amendment of the above-identified application in the manner identified above and that the patent be granted in view of the arguments presented. No new matter has been added by this amendment.

Present Status of Application

Claims 23-27 remain in the application. Claim 27 is withdrawn from consideration. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tu (U.S. 6,100,138) in view of Blosser et al (U.S. 6,979,640, hereinafter "Blosser") and Tsai et al (U.S. 2004/0021473, hereinafter "Tsai"). Claims 25-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tu in view of Blosser and Tsai, and in further view of Hartner et al (U.S. 6,043,529, hereinafter "Hartner"). Claim 24 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

In this paper, claim 23 is amended to recite "a passivation layer serving as a diffusion barrier, conformally formed on the inner landing pad, the transistor, and the substrate." Support for these amendments can be found on page 7, lines 26-30 and Figs. 1F-1I of the application.

Reconsideration of this application is respectfully requested in light of the amendments and the remarks contained below.

Allowable Subject Matter

Applicant thanks the Examiner for his indication in the Office Action that claim 24 would be allowable if rewritten in independent form including all the limitations of the base claim and any intervening claims.

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Rejections Under 35 U.S.C. 103(a)

Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tu in view of Blosser and Tsai. Claims 25-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tu in view of Blosser and Tsai, and in further view of Hartner. To the extent that the grounds of the rejections may be applied to the claims now pending in this application, they are respectfully traversed.

Whether taken alone or in combination, Tu, Blosser and Tsai fail to teach or suggest a structure for a bit line contact hole comprising a passivation layer serving as a diffusion barrier, conformally formed on the inner landing pad, the transistor, and the substrate, as recited in claim 23.

MPEP 2142 reads in part:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaack*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

In connection with the third criteria, MPEP 2143.03 goes on to state:

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). "All words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

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In the rejections, the Examiner identifies nitride barrier layer 135a of Tu as the alleged passivation layer of claim 23.

Tu teaches the structure of a DRAM, wherein an inter-poly dielectric layer IPD1 130 is formed over the landing pad 120, transistor and substrate 100 using a "refilled process." The nitride barrier layer 135a is then formed on IPD1 130.

Applicant notes that IPD1 130 completely covers the landing pad 120, transistor and substrate 100. Furthermore, IPD1 130 comprises a planar upper surface on which nitride barrier layer 135a is disposed. See column 4, lines 39-64 and Figs. 3A and 11A of Tu. Thus, as shown in Figs. 3A and 11A, nitride barrier layer 135a comprises planar upper and lower surfaces. In particular, the topography of nitride barrier layer 135a is not related that of the landing pad 120, transistor and substrate 100.

Applicant therefore submits that Tu does not teach or suggest a passivation layer serving as a diffusion barrier, *conformally* formed on the inner landing pad, the transistor, and the substrate, as recited in claim 23. Blossie, Tsai and Hartner are also silent with respect to this feature.

It is therefore Applicant's belief that even when taken in combination, the prior art references relied upon by the Examiner do not teach or suggest all the limitations of claim 23. For at least this reason, a *prima facie* case of obviousness cannot be established in connection with this claim. Furthermore, as it is Applicant's belief that a *prima facie* case of obviousness is not established for claim 23, the Examiner's arguments in regard to the dependent claims are considered moot and are not addressed here. Allowance of claims 23-26 is respectfully requested.

Foreign Priority Claim

Acknowledgment of Applicant's claim to foreign priority under 35 USC 119(a)-(d) or (f) and receipt of the certified copies of the priority document(s) is respectfully requested.

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Information Disclosure Statement

Applicant notes that an information disclosure statement was filed on October 3, 2006. Applicant respectfully requests that the Examiner indicate that he has considered the information disclosed the statement by returning a copy of the Form PTO-1449 submitted therewith with his initials or other appropriate mark beside each listed reference.

Conclusion

The Applicant believes that the application is now in condition for allowance and respectfully requests so.

Respectfully submitted,



Nelson A. Quintero
Reg. No. 52,143
Customer No. 34,283
Telephone: (310) 401-6180

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